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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,675	04/28/2005	Georg Bogner	502901-198PUS	8410

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EXAMINER
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NEGRON, ISMAEL

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/529,675	Applicant(s) BOGNER ET AL.	
	Examiner Ismael Negron	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-44 is/are rejected.
- 7) ☒ Claim(s) 44 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/29/05</u>   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's preliminary amendment filed on March 29, 2005 has been entered. No claim has been amended. Claims 1-21 have been cancelled. Claims 22-44 have been added. Claims 22-44 are still pending in this application, with claim 22 being independent.

### *Priority*

2. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in GERMANY on September 30, 2002. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter.

### *Title*

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Illumination Device having Luminous Spots with plurality of LED~~for Backlighting an Image Reproduction Device.~~

### ***Abstract***

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for

Art Unit: 2875

details. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because it fails to concisely describe the subject matter of the invention, and it uses legal phraseology and phrases which can be implied. Correction is required. See MPEP § 608.01(b).

5. The Examiner respectfully suggest amending the abstract as follows:

~~The invention relates to an~~ **An** illumination device for backlighting an image reproduction device ~~that contains~~ **containing** light valves, ~~the~~ **illumination device including a plurality of luminous spots arranged in grid format on a flat thermally conductive carrier. Each luminous spot having a plurality of light emitting diodes electrically insulated from one another, and a submount exhibiting good thermal conductivity and being connected to the carrier.** ~~Said device is characterised in that light spots formed respectively by at least one light emitting diode are arranged in a grid on a thermally conductive support. The respective surface area of the light spots is less than that of the surface area defined by the grid.~~

***Drawings***

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: **2**.

7. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

8. Claim 44 is objected to under 37 CFR 1.75 as being a substantial duplicate of Claim 37. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is

proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 23, 24 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 23 is indefinite as it depends on rejected claim 1. The applicant is advised that in comparing the claimed invention with the Prior Art the Examiner assumed claim 23 to be dependent on independent claim 22.

11. Claim 23 is indefinite as it is not clear to what element is the limitation "the carrier" (line 4) referring to, as two separate and distinct carriers were previously defined (i.e. a "flat thermally conductive carrier" in Claim 22, and an "insulating carrier" in line 4 of Claim 23). The applicant is advised that in comparing the claimed invention with the Prior Art the Examiner assumed, in light of applicant's disclosure, that the carrier of claim 22 was the only carrier and was both a flat thermally conductive carrier and an insulating carrier.

12. Claims 24 and 29 are rejected for their dependency on indefinite claim 23.

13. Claims 23-44 are rejected for their dependency on rejected claims 22.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 22-24, 26-31 and 33-36 rejected under 35 U.S.C. 102(b) as being anticipated by KAMADA et al. (U.S. Pat. App. Pub. 2002/0006040).
15. KAMADA et al. discloses an illumination device having:
- **a flat thermally conductive carrier (as recited in Claim 22),**  
Figure 6, reference number 10;
  - **a plurality of luminous spots (as recited in Claim 22),** Figure 6,  
reference number 1;
  - **the luminous spots being arranged on the carrier in a grid**  
**format (as recited in Claim 22),** as seen in Figure 6;
  - **each of the luminous spots having a plurality of light emitting**  
**diodes (as recited in Claim 22),** Figure 6, reference numbers 1a-  
1d;



- **each of the luminous spots having a submount (as recited in Claim 22), Figure 6, reference number 11;**
- **each of the plurality of light emitting diodes of a respective one of the luminous spots being electrically insulated from the others of the light emitting diodes of the respective one of the luminous spots (as recited in Claim 22), inherent, as required by the independent control required to achieve multiple colors as disclosed in paragraph 0052;**
- **the submounts exhibiting good thermal conductivity (as recited in Claim 22), as evidenced in paragraph 0123, lines 1-6;**
- **the submounts being connected to the carrier such that the connections between the submounts and the carrier exhibit good thermal conductivity (as recited in Claim 22), as evidenced in paragraph 0123, lines 1-6;**
- **the area of said submounts being less than the entire area covered by the grid on the carrier (as recited in Claim 23), as seen in Figure 6;**
- **lines for supplying power to the light emitting diodes arranged between the submounts on an insulating carrier on that area of the carrier not occupied by submounts (as recited in Claim 23), Figure 1, reference number 12;**

Art Unit: 2875

- **the lines for supplying power being routed in a flexible film that is continued as a flat lead outside the carrier (as recited in Claim 24), paragraph 142;**
- **the submounts being made of silicon (as recited in Claim 25);**
- **the carrier being made of aluminum (as recited in Claim 26), paragraph 0082, line 4;**
- **the carrier being made of copper (as recited in Claim 27), paragraph 0048, line 4;**
- **a heat sink connected to the carrier (as recited in Claim 28), Figure 25, reference number 16;**
- **the insulating carrier including spaces between the submounts filled with plastic (as recited in Claim 29), Figure 2, reference number 13;**
- **the plurality of light emitting diodes of a respective luminous spot emitting varicolored light (as recited in Claim 30), paragraph 0070, lines 1-6;**
- **the plurality of luminous spots having four light emitting diodes (as recited in Claim 31), Figure 6, reference numbers 1a-1d;**
- **a plurality of reflectors (as recited in Claim 33), Figure 6, reference number 11;**

- each of the luminous spots being surrounded by one of the reflectors (as recited in Claim 33), as seen in Figure 6;
- each reflector forming a depression filled with a transparent plastic (as recited in Claim 34), paragraph 0051, lines 10 and 11;
- a respective one of the plurality of light emitting diodes of one luminous spot being connected in series with a respective light emitting diode of another one of the plurality of luminous spots and forming an electric circuit (as recited in Claim 35), paragraph 0146;
- the ones of the luminous spots having the light emitting diodes associated with the electric circuit being interleaved with luminous spots associated with at least one other electric circuit (as recited in Claim 36), paragraph 0146.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 25, 32 and 37-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over KAMADA et al. (U.S. Pat. App. Pub. 2002/0006040).

17. KAMADA et al. discloses an illumination device including many of the claimed limitations as detailed in previous section 13, further including:

- **each of the identically colored light emitting diodes being connected to different electric circuits (as recited in claims 37 and 44), paragraph 0146;**
- **control devices arranged and dimensioned for providing currents fed to each of the electric circuits (as recited in Claim 38), as seen in Figure 36.**

18. KAMADA et al. discloses all the limitations of the claims, except:

- the submounts being made of silicon (as recited in Claim 25);
- each of said plurality of luminous spots has two green-luminous light emitting diodes, one blue-luminous light emitting diode and one red-luminous light emitting diode (as recited in Claim 32);
- each luminous spot including a plurality of identically colored light emitting diodes (as recited in claims 37 and 44);
- the control devices, in the event of interruption of one of the electric circuits for the identically colored light emitting diodes which causes a color shift in the color produced by said luminous spot, controlling the currents in the electric circuits for the at least one other electric

circuit for the identically colored light emitting diodes or for differently colored light emitting diodes of the same luminous spots to compensate for the color shift produced by the interruption (as recited in Claim 38);

- the control of the current including an increase in the current in the at least one other electric circuit for identically colored light emitting diodes (as recited in Claim 39);
- the control of the current including a decrease in the current in the at least one other electric circuit for differently colored light emitting diodes (as recited in Claim 40);
- the plurality of luminous spots forming a grid of 4x8 luminous spots (as recited in Claim 41);
- each of the plurality of luminous spots having two green-luminous light emitting diodes and two red-luminous light emitting diodes (as recited in Claim 41);
- four electric circuits being provided for the red-luminous light emitting diodes, two of said four electric circuits being assigned to said red-luminous light emitting diodes of identical luminous spots, said identical spots being distributed over the grid in checkered fashion (as recited in Claim 41);
- each of the green-luminous light emitting diodes being connected to eight electric circuits, in each case one green-luminous light

emitting diode of eight luminous spots being connected to one electric circuit and a further green-luminous light emitting diode of the same luminous spot being connected to another electric circuit (as recited in Claim 42);

- the carrier being composed of ultra pure aluminum (as recited in Claim 43).

19. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use silicon as the material of the submount (as recited in Claim 25) or ultra pure aluminum as the material of the carrier (as recited in Claim 43) of the patented illumination device of KAMADA et al., since it has been held by the courts that selection of a prior art material on the basis of its suitability for its intended purpose is within the level of ordinary skill. *In re Leshing*, 125 USPQ 416 (CCPA 1960) and *Sinclair & Carroll Co. v. Interchemical Corp.*, 65 USPQ 297 (1945). In this case, using the claimed material specifically would have flown naturally to one of ordinary skill in the art as necessitated by the requirements of a particular application, as evidenced by KAMADA et al., for example, in paragraphs 0047, 0048, 0082 and 0086.

20. Regarding each luminous spot having two green, one blue and one red light emitting diode (as recited in Claim 32); a plurality of identically colored light emitting diodes (as recited in Claim 37); or two green and two red light emitting diodes (as recited in Claim 42), it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the claimed specific combination of colors, as

required by a desired color output range, as evidenced by KAMADA et al. in paragraphs 0005, 0052 and 0154.

21. Regarding the specific circuit and control arrangement recited in claims 38-42, it would have flown naturally to one of ordinary skill in the art to arrange the LED circuit of KAMADA et al. as necessitated by the requirements of a particular application, as evidenced by KAMADA et al. in, for example, paragraphs 135 and 146.

In addition, the applicant is respectfully advised that, while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997).

22. Regarding the plurality of luminous spots form a grid of 4x8 luminous spots (as recited in Claim 42), the applicant is respectfully advised that in considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 159 USPQ 342 (CCPA 1968). In this case, it would have been obvious to one of ordinary skill in the art to form the illumination device of KAMADA et al. in a 4x8 configuration instead of that disclosed in Figure 6 (4 rows of unspecified length), since the one of ordinary skill would have recognized such arrangement as being merely an example, with selection of a specific configuration over another being an obvious matter of meeting the specific requirements (e.g. desired size of the device) of a given application. In addition, the Examiner takes Official Notice

Art Unit: 2875

of the instant specification failing to disclose that a 4x8 configuration solves any problem or is for a particular reason.

### ***Relevant Prior Art***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Chen** (U.S. Pat. 5,119,174), **Hochstein** (U.S. Pat. 5,857,767), **Ogura et al.** (U.S. Pat. App. Pub. 2002/0020845), **Biebl et al.** (U.S. Pat. 6,375,340), **Matthies et al.** (U.S. Pat. App. Pub. 2002/0050958), **Matsui et al.** (U.S. Pat. App. Pub. 2003/0052594), **Shimizu et al.** (U.S. Pat. App. Pub. 2003/0189829), **Blume et al.** (U.S. Pat. App. Pub. 2004/0062040), **Ellens et al.** (U.S. Pat. 6,799,865) and **Raos et al.** (U.S. Pat. App. Pub. 2005/0258446) disclose illumination devices including a plurality of luminous spot formed by a plurality of multicolored light emitting diodes, such luminous spots being arranged in a grid format. The illumination devices also include heat sink structures for removing the heat generated by the light emitting diodes.

### ***Conclusion***

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-



Art Unit: 2875

2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached on (571) 272-2378. The facsimile machine number for the Art Group is (571) 273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.

  
Ismael Negrón  
Examiner  
AU 2875